RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Mouse mTOR Signaling

Cat. no. 330231 PAMM-098ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Mouse mTOR Signaling RT² Profiler PCR Array profiles the expression of 84 key genes involved in the mammalian target of rapamycin (mTOR) signaling pathway. mTOR, a serine/threonine protein kinase, integrates responses from a wide variety of signals (nutrients, hormones, growth factors and cellular stresses) to regulate cell growth, metabolism and survival. The first generation of mTOR inhibitors (e.g. rapamycin) failed to inhibit all mTOR functions, because the kinase forms two distinct protein complexes, mTORC1 and mTORC2. The rapamycin-sensitive mTORC1 complex regulates multiple biosynthetic cellular processes (protein synthesis, cell cycle progression, cell growth and proliferation). Until recently, the lack of mTORC2-specific inhibitors complicated elucidation of this protein complex's molecular functions. One definitive mTORC2 response is AKT activation, important for cell proliferation, migration and survival (apoptosis and autophagy inhibition). This array includes members of the mTORC1 and mTORC2 complexes as well as upstream regulators of many mTOR responses, and downstream genes from the many cellular processes regulated by mTOR complex activation. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in mTOR signaling with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cycler (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Akt1	Akt1s1	Akt2	Akt3	Cab39	Cab39l	Cdc42	Chuk	Ddit4	Ddit4l	Deptor	Eif4b
B	Eif4e	Eif4ebp1	Eif4ebp2	Fkbp1a	Fkbp8	Gsk3b	Hif1a	Hras1	Hspa4	Igf1	Igfbp3	Ikbkb
C	Ilk	Ins2	Insr	Irs1	Mapk1	Mapk3	Mapkap1	Mlst8	Mtor	Myo1c	Pdpk1	Pik3c3
D	Pik3ca	Pik3cb	Pik3cd	Pik3cg	Pld1	Pld2	Ppp2ca	Ppp2r2b	Ppp2r4	Prkaa1	Prkaa2	Prkab1
E	Prkab2	Prkag1	Prkag2	Prkag3	Prkca	Prkcb	Prkcc	Prkce	Pten	Rheb	Rhoa	Rictor
F	Rps6	Rps6ka1	Rps6ka2	Rps6ka5	Rps6kb1	Rps6kb2	Rptor	Rraga	Rragb	Rragc	Rragd	Sgk1
G	Stk11	Stradb	Telo2	Trp53	Tsc1	Tsc2	Ulk1	Ulk2	Vegfa	Vegfb	Vegfc	Ywhaq
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A02	Mm.148007	NM_026270	Akt1s1	AKT1 substrate 1 (proline-rich)
A03	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A04	Mm.235194	NM_011785	Akt3	Thymoma viral proto-oncogene 3
A05	Mm.26135	NM_133781	Cab39	Calcium binding protein 39
A06	Mm.179091	NM_026908	Cab39l	Calcium binding protein 39-like
A07	Mm.1022	NM_009861	Cdc42	Cell division cycle 42 homolog (S. cerevisiae)
A08	Mm.3996	NM_007700	Chuk	Conserved helix-loop-helix ubiquitous kinase
A09	Mm.21697	NM_029083	Ddit4	DNA-damage-inducible transcript 4
A10	Mm.250841	NM_030143	Ddit4l	DNA-damage-inducible transcript 4-like
A11	Mm.295397	NM_145470	Deptor	DEP domain containing MTOR-interacting protein
A12	Mm.290022	NM_145625	Eif4b	Eukaryotic translation initiation factor 4B
B01	Mm.3941	NM_007917	Eif4e	Eukaryotic translation initiation factor 4E
B02	Mm.6700	NM_007918	Eif4ebp1	Eukaryotic translation initiation factor 4E binding protein 1
B03	Mm.259516	NM_010124	Eif4ebp2	Eukaryotic translation initiation factor 4E binding protein 2
B04	Mm.278458	NM_008019	Fkbp1a	FK506 binding protein 1a
B05	Mm.141864	NM_010223	Fkbp8	FK506 binding protein 8
B06	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
B07	Mm.3879	NM_010431	Hif1a	Hypoxia inducible factor 1, alpha subunit
B08	Mm.334313	NM_008284	Hras1	Harvey rat sarcoma virus oncogene 1
B09	Mm.239865	NM_008300	Hspa4	Heat shock protein 4
B10	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
B11	Mm.29254	NM_008343	Igfbp3	Insulin-like growth factor binding protein 3
B12	Mm.277886	NM_010546	Ikbkb	Inhibitor of kappaB kinase beta
C01	Mm.274846	NM_010562	Ilk	Integrin linked kinase
C02	Mm.4946	NM_008387	Ins2	Insulin II
C03	Mm.268003	NM_010568	Insr	Insulin receptor
C04	Mm.4952	NM_010570	Irs1	Insulin receptor substrate 1
C05	Mm.196581	NM_011949	Mapk1	Mitogen-activated protein kinase 1
C06	Mm.8385	NM_011952	Mapk3	Mitogen-activated protein kinase 3
C07	Mm.270866	NM_177345	Mapkap1	Mitogen-activated protein kinase associated protein 1
C08	Mm.289516	NM_019988	Mlst8	MTOR associated protein, LST8 homolog (S. cerevisiae)
C09	Mm.21158	NM_020009	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
C10	Mm.234502	NM_008659	Myo1c	Myosin IC
C11	Mm.10504	NM_011062	Pdpk1	3-phosphoinositide dependent protein kinase 1
C12	Mm.194127	NM_181414	Pik3c3	Phosphoinositide-3-kinase, class 3
D01	Mm.260521	NM_008839	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide
D02	Mm.213128	NM_029094	Pik3cb	Phosphatidylinositol 3-kinase, catalytic, beta polypeptide
D03	Mm.229108	NM_008840	Pik3cd	Phosphatidylinositol 3-kinase catalytic delta polypeptide
D04	Mm.101369	NM_020272	Pik3cg	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
D05	Mm.212039	NM_008875	Pld1	Phospholipase D1
D06	Mm.260177	NM_008876	Pld2	Phospholipase D2
D07	Mm.260288	NM_019411	Ppp2ca	Protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform
D08	Mm.26134	NM_028392	Ppp2r2b	Protein phosphatase 2 (formerly 2A), regulatory subunit B (PR 52), beta isoform
D09	Mm.275393	NM_138748	Ppp2r4	Protein phosphatase 2A, regulatory subunit B (PR 53)

Position	UniGene	GenBank	Symbol	Description
D10	Mm.207004	NM_001013367	Prkaa1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
D11	Mm.48638	NM_178143	Prkaa2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
D12	Mm.458152	NM_031869	Prkab1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
E01	Mm.31175	NM_182997	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
E02	Mm.6670	NM_016781	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
E03	Mm.33649	NM_145401	Prkag2	Protein kinase, AMP-activated, gamma 2 non-catalytic subunit
E04	Mm.166501	NM_153744	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catatlytic subunit
E05	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
E06	Mm.207496	NM_008855	Prkcb	Protein kinase C, beta
E07	Mm.7980	NM_011102	Prkcc	Protein kinase C, gamma
E08	Mm.24614	NM_011104	Prkce	Protein kinase C, epsilon
E09	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
E10	Mm.319175	NM_053075	Rheb	Ras homolog enriched in brain
E11	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
E12	Mm.275811	NM_030168	Rictor	RPTOR independent companion of MTOR, complex 2
F01	Mm.379007	NM_009096	Rps6	Ribosomal protein S6
F02	Mm.301827	NM_009097	Rps6ka1	Ribosomal protein S6 kinase polypeptide 1
F03	Mm.268383	NM_011299	Rps6ka2	Ribosomal protein S6 kinase, polypeptide 2
F04	Mm.220417	NM_153587	Rps6ka5	Ribosomal protein S6 kinase, polypeptide 5
F05	Mm.394280	NM_028259	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F06	Mm.271937	NM_021485	Rps6kb2	Ribosomal protein S6 kinase, polypeptide 2
F07	Mm.209933	NM_028898	Rptor	Regulatory associated protein of MTOR, complex 1
F08	Mm.31178	NM_178376	Rraga	Ras-related GTP binding A
F09	Mm.190922	NM_001004154	Rragb	Ras-related GTP binding B
F10	Mm.220922	NM_017475	Rragc	Ras-related GTP binding C
F11	Mm.300814	NM_027491	Rragd	Ras-related GTP binding D
F12	Mm.28405	NM_011361	Sgk1	Serum/glucocorticoid regulated kinase 1
G01	Mm.44231	NM_011492	Stk11	Serine/threonine kinase 11
G02	Mm.286006	NM_172656	Stradb	STE20-related kinase adaptor beta
G03	Mm.288702	NM_027880	Telo2	TEL2, telomere maintenance 2, homolog (S. cerevisiae)
G04	Mm.222	NM_011640	Trp53	Transformation related protein 53
G05	Mm.224354	NM_022887	Tsc1	Tuberous sclerosis 1
G06	Mm.30435	NM_011647	Tsc2	Tuberous sclerosis 2
G07	Mm.271898	NM_009469	Ulk1	Unc-51 like kinase 1 (C. elegans)
G08	Mm.162025	NM_013881	Ulk2	Unc-51 like kinase 2 (C. elegans)
G09	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G10	Mm.15607	NM_011697	Vegfb	Vascular endothelial growth factor B
G11	Mm.1402	NM_009506	Vegfc	Vascular endothelial growth factor C
G12	Mm.289630	NM_011739	Ywhaq	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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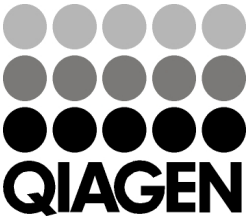

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